

Appl. No. 09/773,245
Amdt. Dated March 17, 2005
Reply to Office action of January 21, 2005
Attorney Docket No. P11147-US1
EUS/J/P/05-3072

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 -41. (Canceled)

42. (New) A method for data transmission between a circuit switched network, via an interface means that includes a media gateway, and a packet switched network, the method comprising:

coupling the circuit switched network to the packet switched network with the interface means, wherein two network layers in the circuit switched network are used for carrying the data transmission, via the interface means, between the circuit switched network and the packet switched network;

processing signaling information associated with the data transmission in the circuit switched network on a first network layer of the two network layers;

transferring the payload information associated with the data transmission on a second network layer of the two network layers in the circuit switched network utilizing a protocol stack, the protocol stack comprising:

a first protocol stack in a mobile station, the first protocol stack coupled to

a second protocol stack in a radio network means, the second protocol stack being coupled to

a third protocol stack in the media gateway; and

information frame generating means for generating an information frame containing payload information associated with the data transmission; and

responsive to detecting a received information frame lacking payload information, a first discontinuous transmission (DTX) means in the second protocol stack discarding the received information frame to improve the data rate, wherein remaining information frames are forwarded to the packet switched network via a direct connection between the radio network means and the media gateway.

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43. (New) The method of claim 42, wherein the circuit switched network is a cellular telephone network, the radio network means is a Base Transceiver Station (BTS), the packet switched network is the Internet, and the second layer of the two network layers further comprises information frame generating means for generating an information frame with a receive sequence number.

44. (New) The method of claim 42, wherein the circuit switched network is a GSM cellular telephone network.

45. (New) The method of claim 43, further comprising the step of adapting a transfer rate of the payload information within the BTS.

46. (New) The method of claim 42, further comprising the step of disabling a second DTX means in the third protocol stack.

47. (New) The method of claim 43, further comprising generating information frames containing payload information in the first protocol stack.

48. (New) The method of claim 47, further comprising the step of monitoring the generated information frames for determining whether the generated information frames contain payload information.

49. (New) The method of claim 48, wherein the step of monitoring the generated information frames further comprises the step of detecting an "S" frame, which carries supervisory information, and if the "S" frame receive sequence number is equal to that of a previous frame, discarding the "S" frame.

50. (New) The method of claim 48, further comprising the step of monitoring the generated information frames in the second protocol stack.

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51. (New) A method for data transmission from a packet switched network, via an interface means that includes a media gateway, to a circuit switched network, the method comprising:

coupling the packet switched network to the circuit switched network with the interface means, wherein two network layers in the circuit switched network are used for carrying the data transmission via the interface means between the packet switched network and the circuit switched network;

receiving the data transmission from the packet switched network in the media gateway;

processing signaling information associated with the data transmission in the circuit switched network on a first network layer of the two network layers;

transferring payload information associated with the data transmission in the circuit switched network on a second layer of the two network layers utilizing a protocol stack, the protocol stack comprising:

a first protocol stack in the media gateway, the first protocol stack coupled to

a second protocol stack in a radio network means, the second protocol stack coupled to

a third protocol stack in a mobile station; and

information frame generating means for generating an information frame containing the payload information of the data transmission; and

responsive to detecting a received information frame lacking payload information, a discontinuous transmission (DTX) means in the first protocol stack discarding the received information frame to improve the data rate, wherein remaining information frames are forwarded to the mobile station via a direct connection between the media gateway and the radio network means.

52. (New) The method of claim 51, wherein the circuit switched network is a cellular telephone network, the radio network means is a Base Transceiver Station (BTS), the packet switched network is the Internet, and the second layer of the

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two network layers further comprises information frame generating means for generating an information frame with a receive sequence number.

53. (New) The method of claim 51, wherein the circuit switched network is a GSM cellular telephone network.

54. (New) The method of claim 52, further comprising the step of adapting a transfer rate of the payload information within the BTS.

55. (New) The method of claim 51, further comprising the step of disabling a second DTX means in the second protocol stack.

56. (New) The method of claim 52, further comprising the step of generating information frames, containing payload information, in the first protocol stack.

57. (New) The method of claim 56, further comprising the step of monitoring the generated information frames for determining whether the generated information frames contain payload information.

58. (New) The method of claim 57, further comprising the step of monitoring the generated information frames in the first protocol stack.

59. (New) The method of claim 57, wherein the step of monitoring the generated information frames further comprises the step of detecting an "S" frame, which carries supervisory information, and if the "S" frame receive sequence number is equal to that of a previous frame, discarding the "S" frame.

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60. (New) A communication network element for data transmission from a circuit switched network via an interface means that includes a media gateway to a packet switched network, the network element comprising:

- a first network layer in the circuit switched network connected to the interface means for processing signaling information associated with the data transmission;

- a second network layer in the circuit switched network connected to the interface means for transferring payload information associated with the data transmission, the second network layer utilizing a protocol stack, the protocol stack comprising:

 - a first protocol stack in a mobile station, the first protocol stack coupled to

 - a second protocol stack in a radio network means, the second protocol stack being coupled to

 - a third protocol stack in the media gateway;

- means for generating information frames containing the payload information received from the circuit switched network; and

- a first discontinuous transmission (DTX) means in the second protocol stack for discarding an information frame lacking payload information to improve the data rate, wherein remaining information frames are forwarded on to the packet switched network via a direct connection between the media gateway and the radio network means.

61. (New) The communication network element of claim 60, further comprising means in the second protocol stack for monitoring the generated information frames.

62. (New) The communication network element of claim 60, wherein the circuit switched network is a cellular telephone network, the radio network means is a Base Transceiver Station (BTS), the packet switched network is the Internet, and the information frame generating further comprises means for generating an information frame with a receive sequence number.

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63. (New) The communication network element of claim 60, wherein the circuit switched network is a GSM cellular telephone network.

64. (New) The communication network element of claim 62, further comprising means for adapting a transfer rate of the payload information within the BTS.

65. (New) The communication network element of claim 60, further comprising means for disabling a second DTX means in the third protocol stack.

66. (New) The communication network element of claim 60, further comprising means in the first protocol stack for generating information frames containing payload information.

67. (New) The communication network element of claim 66, further comprising means for monitoring the generated information frames for determining whether the generated information frames contain payload information.

68. (New) The communication network element of claim 67, further comprising means for monitoring the generated information frames in the second protocol stack.

69. (New) The communication network element of claim 67, wherein the means for monitoring the generated information frame further comprises means for discarding a detected "S" frame, which carries supervisory information, if the detected "S" frame receive sequence number is equal to that of a previous frame.

70. (New) A communication network element for data transmission from a packet switched network via an interface means that includes a media gateway to a circuit switched network, the communication network element comprising:

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a first network layer in the circuit switched network connected to the interface means for processing signaling information associated with the data transmission;

a second network layer in the circuit switched network connected to the interface means, the second network layer utilizing a protocol stack for transferring payload information associated with the data transmission, the protocol stack comprising:

a first protocol stack in the media gateway, the first protocol stack being coupled to

a second protocol stack in a radio network means, the second protocol stack being coupled to

a third protocol stack in a mobile station and

information frame generating means for generating an information frame containing the payload information associated with the data transmission; and

a discontinuous transmission (DTX) means in the first protocol stack for discarding a received information frame lacking payload information to improve data transfer rate, wherein remaining information frames are forwarded to the mobile station via a direct connection between the media gateway and the radio network means.

71. (New) The communication network element of claim 70, wherein the circuit switched network is a cellular telephone network, the radio network means is a Base Transceiver Station (BTS), the packet switched network is the Internet and the information frame generating means further comprises means for generating an information frame with a receive sequence number.

72. (New) The communication network element of claim 70, wherein the circuit switched network is a GSM cellular telephone network.

73. (New) The communication network element of claim 71, further comprising means for adapting a transfer rate of the data transmission within the BTS.

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74. (New) The communication network element of claim 70, further comprising means for disabling a second DTX means in the second protocol stack.

75. (New) The communication network element of claim 70, further comprising means in the first protocol stack for generating information frames containing the payload information.

76. (New) The communication network element of claim 75, further comprising means for monitoring the generated information frames for determining whether the generated information frames contain the payload information.

77. (New) The communication network element of claim 76, wherein the means for monitoring the generated information frame further comprises means for discarding a detected "S" frame, which carries supervisory information, if the detected "S" frame receive sequence number is equal to that of a previous frame.